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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/402,362	10/04/1999	MARJORIE GAN VALIX	23999	5836

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NATH & ASSOCIATES
1030 15TH STREET NW
6TH FLOOR
WASHINGTON, DC 20005

EXAMINER
MADSEN, ROBERT A

ART UNIT	PAPER NUMBER
1761	10

DATE MAILED: 01/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

07-01)

Office Action Summary	Application No.	Applicant(s)	
	09/402,362	VALIX, MARJORIE GAN	
	Examin r	Art Unit	
	Robert Madsen	1761	

-- Th MAILING DATE of this communication app ars on th cover sh et with the correspond nce addr ss --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

See the attached detailed Office action for a list of the certified copies not received.

Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

) ☐ The translation of the foreign language provisional application has been received.

cknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

s)

of References Cited (PTO-892)

f Draftsperson's Patent Drawing Review (PTO-948)

ion Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 11, 2001 has been entered. Accordingly, claim 1 has been cancelled and claim 18 has been added. Claims 2-18 remain pending in the application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-9, 12,13,15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2703807) in view of Aria et al. (JP 406200289A), Juinichi (JP07011285), Linden et al. (US 2662907), Feuge et al. (US 2802844), and Cheng et al. (US 5374751).

Regarding 2, 3,12, Wilder et al. '807 teaches heating a solution of crude sugar ane wax with iso-propanol, as recited in claim 3, to remove the pitch from the hard wax fraction, heating the wax between 80°C and 150°C with an oxygen containing gas,

including air as recited in claim 12, (Column 1, line 27 to Column 2, line 20, Examples). Although Wilder et al. '807 teaches heating crude wax in iso-propanol to remove pitch from the wax is a well known procedure, Wilder et al. is silent in teaching the pitch removal steps that are repeated.

Arai et al. are relied on as evidence of the conventional steps involved in removing pitch from crude sugar cane wax wherein the crude wax is heated with iso-propanol, the solution is decanted while hot, the decanted portion is crystallized. The process is then repeated with the crystallized decanted portion, and the process may include other steps depending on the desired properties of the wax (Abstract, Paragraphs 0020 and 0021).

Junichi et al. are relied on as further evidence of the conventional steps followed for removing pitch from a crude wax (including sugar cane) by heating in iso-propanol and decanting, wherein the steps are repeated 4 times, each time for 30 minutes, and also teach using an oxidizing material (Abstract, paragraphs 007-0013).

Linden is relied on as further evidence of the conventional steps involved in removing pitch from the wax of crude sugar cane wax heated in iso-propanol. Linden et a. teach heating the iso-propanol to its boiling point, allowing phase separation of the solution and filtering the upper phase while hot, and cooling the upper phase and separating the solvent from the wax, and repeating the step (Column 1, lines 1-25, Example 1: Column 1 line 45 to Column 3, line 4, Claim 1).

Feuge et al. are also relied on as further evidence of the conventionality of purifying wax from a crude wax (rice bran wax) wherein the impurities are removed from

the wax by repeating crystallization steps using iso-propanol and the wax is oxidized to remove the color (Column 1, lines 32-36, Column 2, lines 10-31).

Therefore, in light of the prior art, it would have been obvious to repeat the steps of heating the iso-propanol to its boiling point with the wax, allowing phase separation of the solution and filtering the upper phase while hot, and cooling the upper phase and separating the solvent from the wax since Wilder et al. '807 teach using a conventional extraction method with iso-propanol to remove pitch from crude sugar cane wax and it was well known in the art to repeat these steps to remove pitch from a crude wax.

Wilder et al. '807 is also silent in teaching removing any residual peroxides from the wax after treatment with the oxygen gas. However, it was well known in the art that excess peroxides in a wax or oil For example, Feuge et al. are relied on as evidence of the conventionality of removing spent bleaching reagents (comprising peroxides) from wax after the bleaching process (Example 8 in Column 5). Furthermore, it was well known conventional step in the edible oil art to remove any residual oxygen materials after a bleaching step to reduce odors. This was commonly done by injection nitrogen into the mixture. Cheng et al. are relied on as evidence of the conventionality of including a final oil process step (i.e. after oxidation) to remove excess peroxides (i.e. deodorize) using an inert gas such as nitrogen, while heating the oil (Column 1, line 12 to Column 2, line 50). Therefore, it would have been obvious to further remove any residual peroxides since it was well known in the art to remove peroxides after a bleaching step to reduce odors.

Regarding claims 4 and 5, Wilder et al. '807 are silent in teaching a particular amount of iso-propanol, but Aria et al. teach the conventional amount of iso-propanol used to remove pitch is 3 to 20 times the weight of the wax, which includes 1:9 as recited in claim 5 (Abstract). Therefore, it would have been obvious to use anywhere between 1:3 and 1:20 (wax: iso-propanol) to remove the pitch since one would have been substituting one known method of pitch removal from crude sugar cane wax for another.

Regarding claims 6 and 7, Wilder et al. '807 are silent in teaching how long the wax is heated with the alcohol, but Junichi et al. relied on as evidence of the conventionality of heating the crude wax for thirty minutes in iso-propanol and repeats the heating step 3 more times (See Examples in Paragraphs 009-0012). Additionally, Aira et al. teaches 1 hour and repeats the step one time, but teaches additional steps may be included depending on the desired quality of the wax (See Paragraphs 0021, 0024-0026). Therefore it would have been obvious to select any time between 30 minutes to 60 minutes since on would have been substituting one known pitch removal step for another for the same purpose: removing pitch from crude sugar cane wax. Furthermore the time selected would have been an obvious result effective variable of the desired amount of decolorization and the number of heating solvent steps used.

Regarding claim 8, Wilder et al. '807 are silent in teaching how the wax is heated is decanted or separated, but Arai et al. are relied on as evidence of the conventionality of using a centrifugal separation (Abstract). Therefore, it would have been obvious to

use centrifugal separation to remove the pitch from the wax since one would have been substituting one separation method for another for the same purpose.

Regarding claim 9, Wilder et al. '807 are silent in teaching how many times the step of heating the wax with the iso-propanol is followed, but it was well known to do so twice, as taught by Arai et al. (Abstract). Further Linden, teaches the number of heating steps required is a result effective variable of the particular solvent used to extract the crude wax from the sugar cane mud (Example1). Therefore, it would have been obvious to repeat the iso-propanol and wax-heating step at least once since it was well known conventional method of separating the pitch from crude sugar cane wax. To repeat the iso-propanol/ wax-heating step more than two times would have been an obvious result effective variable of the particular solvent used to extract the crude sugar cane wax from the sugar cane mud.

Regarding claim 13, Wilder et al. '807 teach oxidizing, but is silent in teaching using a catalyst. However, the use of catalysts in a reaction was notoriously well known for increasing the rate of reaction. Therefore, to use any catalyst in combination with any particular reaction, such as oxidation, would have been an obvious result effective variable of the desired reaction time.

Regarding claim 15 Wilder et al. '807 are silent in teaching the steps of further heating the wax with activated carbon. However, Aria et al. are relied on as evidence that in recovering wax from crude sugar cane wax, one may also use active carbon as an absorbent and teach other processes, such as absorption, may be used in addition to the at least two heating in iso-propanol steps according to the desired wax quality

(Paragraphs 0011, 0021). Therefore to further include the steps of heating the wax with activated carbon would have been an obvious result effective variable of the particular color and odor associated with the wax since it was well known to include such steps in deriving sugar cane wax from crude sugar cane wax.

Regarding claim 16, Wilder et al. '807 teach heating wax in iso-propanol, but are silent in treating the wax with iso-propanol *after* oxidizing. However, Wilder et al. '807 do teach there is a limit to the amount of oxidation (Column 2, lines 1-20). Junichi teaches using solvent extraction as a means for decoloring the wax (Abstract). Therefore, to repeat the steps of solvent extraction as recited in claim 16 after oxidation, would have been an obvious result effective variable of the particular color one desired after oxidation since it was known that one cannot use oxidation to remove all color since there is a limit to the extent of oxidation one should use.

Claims 10,11, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US 2703807) in view of Aria et al. (JP 406200289A), Juinichi et al. (JP07011285), Linden et al. (US 2662907), Feuge et al. (US 2802844), and Cheng et al. (US 5374751), further in view of

Regarding claim 10, 11, and 14 Wilder et al. '807 teach oxidizing the wax with an oxygen containing gas to remove colors and odors (Column 2, lines 1-13), as discussed above in the rejection of claim 2, but is silent in teaching other oxygen free gases, as recited in claims 10 and 11 or including a particular catalyst. However, it was well known

in the art to provide a catalyst when oxidation of waxes and edible oils with oxygen free gas.

Hilfman is relied on as further evidence of the conventionality of removing aromatic impurities from waxes used in contact with food products, and thus are food grade (Abstract, Column 1, line 57 to Column 2, line 9). Hilfman teaches using an inert gas, including nitrogen as recited in claims 10 and 11 in combination with a cobalt, manganese, or an iron catalyst as recited in claim 14 to remove the undesirable impurities at a temperature of 93°C to 140°C (Column 2 lines 45-55, Column 3, lines 7-33, Column 3, line 53 to column 4, line 36). Therefore, it would have been obvious to substitute the oxygen containing gas with an inert gas and catalyst since one would have been substituting one method of removing impurities from a food grade wax for another.

Claims 17 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Synosky et al.(H1241), Miguel-Colombel et al. (US 5882657, and Lake (US 3931258).

Synosky et al. teach an insoluble portion of chewing gum comprising up to 305 wax (Column 5, lines 32-40), 5-95% elastomers that including polyvinyl alcohol (Column 4, line 64 to Column 5, line 4), 0.5% to 40% softeners which include mixtures triglycerides and fatty acids (Column 5, lines 52-63). Synosky et al. further teach the soluble portion of the chewing gum comprises additional softeners of lecithin, or polar lipids (0.5% to 15.0%). Additional bulk sweeteners including sugar (reducing sugars are aldehydes) sugar alcohols may also be added to the total gum composition from 20-%

to 80% and additional flavoring agents, or flavor oils, may be added up to 10% of the total chewing gum composition (Column 6, lines 22-30,35-45 and 60-63). Thus Synosky et al. teach a range of a food grade wax composition (i.e. chewing gum which comprises 6.2-11% wax esters, 0-3% tri-glycerides, 1.8-44.5% alcohols and free fatty acids and polar lipids of 36.8-87.2% and 2.8 to 9.5% flavoring oils. Although Synosky et al. are silent in teaching 2.8 to 9.5% aldehydes per se , Synosky et al. teach sugars may be used as sweeteners and reducing sugars are known aldehydes. Synosky et al. also teach flavors which are also known to comprise aldehydes.

Furthermore, Synosky et al. are silent in teaching sugar cane wax, however, it was well known in the art that sugar cane wax is a food grade wax interchangeable with the same waxes taught by Synosky et al. (i.e. candelilla, carnuba, and beeswax). For example, Miguel-Columbel et al. teach a food grade wax composition prepared from up to 8% wax (which may be sugar cane, candelilla, carnuba or beeswax) and oils (i.e. comprising tri-glycerides, fatty acids lipids alcohols) of up to 93.3%. Thus, Miguel-Colombel et al. teach the conventionality of using sugar cane wax in a food grade wax composition.

Lake is relied on as evidence of the conventional crude sugar cane wax composition of fatty acids , alcohols, esters, and aldehydes (Column 1, lines 1-13). Therefore, to have any particular range of wax esters aldehydes , triglycerides, alcohols, free fatty acids , sterols, and lipids in the food grade wax composition of Synosky et al. would have been an obvious result effective variable of the desired flavor or sweetness since these components will contribute to the aldehydes and tri-glyceride level in the

composition and the wax contributes fatty acids , alcohols, esters, and aldehydes. Furthermore, "[E]ven though product-by-process claims are limited by and defined by the process,determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted)

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Naoichi (JP10-060473) teaches purification of sugar cane wax. Hessler teaches a method of extracting carnuba-like waxes from montan wax using a solvent extraction and oxidation. Idemitsu teaches oxidation with a catalyst and inert gas.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Madsen whose telephone number is (703)305-

0068. The examiner can normally be reached on 6:30AM-4:00PM M-F (except alternate Fridays).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (703)308-3959. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-7718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0061.

Robert Madsen
Examiner
Art Unit 1761
January 9, 2002

MILTON I. CANO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

1/9/02